

Monitoring Data RecordProject Title: R-2231CB (US 220 Bypass) COE Action ID: 199400590Stream Name: UT to Big Mountain Creek (Site 3) DWQ Number: 000874City, County and other Location Information: Montgomery County, US 220 Bypass ( Station 255+00 RT.)Date Construction Completed: Water was turned on 5/3/05

Monitoring Year: ( 5 ) of 5

Ecoregion: \_\_\_\_\_ 8 digit HUC unit 03040203

USGS Quad Name and Coordinates: \_\_\_\_\_

**Rosgen Classification:** \_\_\_\_\_Length of Project: 423' Urban or Rural: Rural Watershed Size: \_\_\_\_\_Monitoring DATA collected by: M. Green, J. Young, & O. Pilkington Date: 6/8/11

Applicant Information:

Name: NCDOT Roadside Environmental UnitAddress: 1425 Rock Quarry Road Raleigh, NC 27610Telephone Number: (919) 861-3772 Email address: [mlgreen@ncdot.gov](mailto:mlgreen@ncdot.gov)

Consultant Information:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_ Email address: \_\_\_\_\_

**Project Status:** Complete**Monitoring Level required by COE and DWQ (404 permit/ 401 Cert.):** Level (1) 2 3Monitoring Level 1 requires completion of *Section 1, Section 2 and Section 3*

**Permit States:** The permittee shall monitor the stream relocation mitigation site for a period of five years starting the year following construction. Monitoring data at the site should include the following: reference photos, plant survival and channel stability. Data shall be collected each year for 5 years at the same time of year. No less than two (2) bankfull flow events must be documented through the required 5-year monitoring period. If less than 2 bankfull events occur during the first 5 years, monitoring will continue until the second bankfull event is documented. The bankfull event must occur during separate monitoring years. Vegetation used to stabilize banks shall be limited to native woody species, and should include establishment of 50 foot wide vegetated buffer on the relocated channel. Stream banks will be planted with native vegetation that represents both woody (trees and shrubs) and herbaceous species. Species selection will be based on a survey of the vegetation from the approved reference reach. Survival of woody species planted at the stream mitigation sites should be at least 320 through year three. A ten percent mortality rate will be accepted in year four (288 tree/acre) and another ten percent in year five resulting in a required survival rate of 260 trees/acre through year five. If within any monitoring year, bank or stream stability is not acceptable as determined by the Corps of Engineers, and remedial action required by the Corps of Engineers is performed, the five-year monitoring period of the affected portions of the stream will start again at monitoring year one. The permittee will coordinate all stream mitigation remedial activities with the Corps of Engineers, Wilmington District, prior to taking any remedial action. The permittee will submit a brief written report with representative photographs within 90 days after the monitoring year is completed.

*(Monitoring at all levels must complete this section)*

**A total of 7 photos were taken from 4 photo point locations. The last photo is an overview of the site.**

**Individual from whom additional photos can be obtained (name, address, phone):**\_\_\_\_\_

If required to complete Level 3 monitoring only stop here; otherwise, complete section 2.

**Attach plan sheet indicating reference photos.**

Estimated causes, and proposed/required remedial action:\_\_\_\_\_

ADDITIONAL COMMENTS: Planting was completed at this stream relocation by December 2006. The planting plan list the following species to be planted on the streambank: black willow, silky dogwood, and tag alder bareroot seedlings and in the buffer area: yellow poplar, sycamore, water oak, and green ash bareroot seedlings. One 100 x 25 foot vegetation plot was set in the buffer area. An at-planting stem count was completed in January 2007. This gave an at-planting count of 26 planted stems in the vegetation plot. Plant survival counts were conducted during June 2011 monitoring evaluation with the results showing an average density of 654 trees per acre which is well above the minimum success criteria of 260 trees per acre for year five. Other species noted on site included pine, *Juncus* sp., briars, smartweed, sedge, tear-thumb, red maple, locust, sweetgum, and various grasses. NCDOT proposes to discontinue plant survival monitoring at this stream relocation.

If required to complete Level 1 and Level 2 monitoring only stop here; otherwise, complete section 3.

<b>Plot #</b>	<b>Yellow Poplar</b>	<b>Sycamore</b>	<b>Water Oak</b>	<b>Green Ash</b>	<b>Total (5 year)</b>	<b>Total (at planting)</b>	<b>Density (Trees/Acre)</b>
1	11	6	4	4	25	26	654
Average Density (Trees/Acre)							654

### Section 3. CHANNEL STABILITY

**Visual Inspection:** The entire stream project as well as each in-stream structure and bank stabilization/revetment structure must be evaluated and problems addressed.

Report on the visual inspection of channel stability. Physical measurements of channel stability/morphology will not be required. Include a discussion of any deviations from as-built and an evaluation of the significance of these deviations and whether they are indicative of a stabilizing or destabilizing situation.

This stream relocation is highly stabilized with herbaceous vegetation for the 2011 evaluation. NCDOT proposes to discontinue channel stability monitoring at this stream relocation.

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Date	Station Number	Station Number	Station Number	Station Number	Station Number
Structure Type					
Is water piping through or around structure?					
Head cut or down cut present?					
Bank or scour erosion present?					
Other problems noted?					

### Section 4. DEBIT LEDGER

The entire UT to Big Mountain Creek (Site 3) stream relocation site was used for the R-2231CB project to compensate for unavoidable stream impacts.



# UT Big Mountain Creek (Site 3)



Photo Point #1 (Upstream)



Photo Point #1 (Downstream)



Photo Point #2 (Upstream)



Photo Point #2 (Downstream)



Photo Point #3 (Upstream)



Photo Point #3 (Downstream)



# UT Big Mountain Creek (Site 3)



Overview of Site Looking Downstream

